

Title: STATUS AND TRENDS IN MANGROVE AREA EXTENT
WORLDWIDE...

Madagascar

Vegetation description

Mangroves are found in the far north near Diégo-Suarez and then continue till south of Morombe, almost exclusively on the western coast, they are found on saline alluvial soils directly exposed to the tides. The main species are: *Rhizophora mucronata*, *Bruguiera gymnorhiza*, *Ceriops tagal* (*Ceriops boviniana*), *Avicennia officinalis* and *Sonneratia alba*. These species are often mixed with *Heritiera littoralis*, *Terminalia catappa*, *Thespesia populnea*, *Derris uliginosa* and, on the edge of these stands, *Casuarina equisetifolia*, as well as a large fern, *Acrostichum aureum*. The largest stand is found along the Betsiboka estuary. Mangroves are of considerable economic value and extensively exploited for tannin bark from the *Rhizophora*, *Ceriops* and *Bruguiera* genera, and firewood, since they easily regenerating under normal conditions. *Typha angustifolia* and the fern *Acrostichum aureum* proliferate on calcareous ground.

FAO, UNEP. 1981. *Tropical forest resources assessment project. Forest resources of tropical Africa. Part II: Country Briefs* FAO, UNEP. 586 pp..

National level mangrove area estimates

Year	Area (ha)	Source	Trend	Methodology/Comments
1921	400 000	Perrier de la Bathie. 1921. La végétation malgache. <i>Ann. Mus. Colon. Marseille</i> , 3e sér., 9: 1-268.	X	Cited in: Rasolofo, V.M. 1993. Mangrove of Madagascar. In: Diop, E.S., 1993. <i>Conservation and sustainable utilization of mangrove forests in Latin America and Africa regions, Part II - Africa</i> . p. 245-261. Mangrove Ecosystems Technical Reports vol.3 ITTO/ISME Project PD114/90. Okinawa, Japan, ISME. 262 pp.
1955	350 000	Humbert, H. 1965. Notice de la carte internationale du tapis végétal: Madagascar. Etat des travaux de la section scientifique et technique de l'institut français de Pondichery - <i>Hors serie</i> No. 6 Toulouse - France	X	Cited in: FAO, UNEP. 1981. <i>Tropical Forest Resources Assessment Project, Forest Resources of Tropical Africa. Part II: Country Briefs</i> FAO, UNEP 586pp.
1959	217 000	Gachet. 1959. Les palétuviers de Madagascar.		Cited in Rasolofo, V.M. 1993. Mangrove of Madagascar. In:

		<i>Bulletin de Madagascar</i> n 153.		<p>Diop, E.S., 1993. <i>Conservation and sustainable utilization of mangrove forests in Latin America and Africa regions, Part II - Africa</i>. p. 245-261. Mangrove Ecosystems Technical Reports vol.3 ITTO/ISME Project PD114/90. Okinawa, Japan, ISME. 262 pp.</p> <p>Doute, R.N. Ochanda & H. Secondary reference, no primary source provided. The "Year" is the publication year</p>
1966	327 000	Kiener. 1966. Contribution à l'étude écologique et biologique des eaux saumâtres malgaches. <i>Vie et milieu</i> , pp 1013-1149	X	<p>Cited in Rasolofo, V.M. 1993. Mangrove of Madagascar. <i>In</i>: Diop, E.S., 1993. <i>Conservation and sustainable utilization of mangrove forests in Latin America and Africa regions, Part II - Africa</i>. p. 245-261. Mangrove Ecosystems Technical Reports vol.3 ITTO/ISME Project PD114/90. Okinawa, Japan, ISME. 262 pp.</p>
1972	340 300	Spalding, M.D., Blasco, F. and Field, C.D. , eds. 1997. <i>World Mangrove Atlas</i> . The International Society for Mangrove Ecosystems, Okinawa, Japan. 178 pp.		Map analysis. Scale 1:1 000 000
1980	300 000	FAO, UNEP. 1981. <i>Tropical Forest Resources Assessment Project, Forest Resources of Tropical Africa. Part II: Country Briefs</i> FAO, UNEP 586pp.		Estimation based on updating of Humbert, 1965 (see above).
1981	339 900	Faramala, M.H. 1981. <i>Etude de la végétation de Madagascar à l'aide de données spatiales</i> . PhD Thesis, Université Paul Sabatier, Toulouse, France.		<p>Cited in: Mayaux P., Gond V. and Bartholomé E. 2000 <i>Mapping the Forest-Cover of Madagascar with SPOT 4-VEGETATION data</i>. Global Vegetation Monitoring Unit - Space Applications Institute. Ispra (VA) – Italy</p> <p>http://vegetation.cnes.fr/vgtprep/vgt2000/mayaux.pdf</p> <p>The figure reported in the document is 3,399,103 ha. Presumably this is a typographical error.</p>
1983	320 700	Saenger, P., Hegerl E.J. and J.D.S., Davie. 1983. <i>Global status of mangrove</i>		Secondary reference, no primary source provided. The "Year" is the publication year

		ecosystems. Commission on Ecology Papers No.3. IUCN. Gland, Switzerland. 88 pp.		
1983	320 000	Wacharakitty, S. 1983. Mangrove Ecosystem in General. In: <i>ESCAP/UNESCO/NRCT Regional Remote Sensing Training Course of Mangrove Ecosystem</i> . p. 22-33. Bangkok, Nov. 28-Dec. 16 1983		Cited in: FAO , 1988. <i>Manual on mapping and inventory of mangroves</i> . Benessalah, D., ed. FAO Rome, 123 pp.
<u>1987</u>	<u>325</u> <u>560</u>	Commission of the European Communities. 1987. <i>Mangroves of Africa and Madagascar. Conservation and reclamation: The Mangroves of Madagascar</i> . CML, Centre for Environmental Studies, University of Leyden, 24 pp.	X	Secondary reference, no primary source provided. The "Year" is the publication year
1990	429 815	Lebigre, J-M. 1990. <i>Les marais maritimes du Gabon et de Madagascar</i> . Thèse de Doctorat d'État. Institut de Géographie, Université de Bordeaux III.		Cited in: Kelleher, G., Bleakley, C. and Wells, S. 1995. <i>A global representative system of marine protected areas</i> . Vol.II-III-IV Great Barrier Reef Marine Park Authority, IBRD, The World Bank, IUCN. IBRD
1992	332 000	Kelleher, G., Bleakley, C. and Wells, S. 1995. <i>A global representative system of marine protected areas</i> . Vol.II-III-IV Great Barrier Reef Marine Park Authority, IBRD, The World Bank, IUCN. IBRD		Based on CEC 1992. No complete reference provided.
1992	330 000	Hughes, R.H. and Hughes, J.S. 1992. <i>A Directory of African Wetlands</i> . IUCN, Gland, Switzerland and Cambridge, UK/UNEP, Nairobi, Kenya/WCMC, Cambridge, UK. 820 pp.		Analysis of maps and/or remote sensing imageries. No specific scale is given. The "Year" is the publication year.
1999	453 000	Mayaux P., Gond V. and Bartholomé E. 2000. <i>Mapping the Forest-Cover of Madagascar with SPOT 4-VEGETATION data</i> .		Remote sensing. The figure reported in the document is 4,530,103 ha. Presumably this is a typographical error

Trends in mangrove area extent over time

